REMARKS

The Office Action of January 4, 2011 has been reviewed and the Examiner's comments carefully considered. Claims 83, 85, 87-110, and 112-170 are pending in this application. Claims 123-162 and 166-168 have been withdrawn in response to the Restriction Requirement issued April 6, 2009. Independent claim 83 has been amended to recite that the steel sheet has a yield strength of 197 MPa or more and an r_m-value of 1.47 or more. Support for this amendment may be found in Table 4 where all of the inventive steels having the claimed composition have values meeting this limit. Independent claim 95 has been amended to use the transitional phrase "consisting essentially of". Claim 100, which depends from claim 95, has been amended to remove the limitation of 0.1~0.8 % of Si. Independent claim 108 has been amended to recite that the steel sheet has a yield strength of 162 MPa or more and an r_m-value of 1.55 or more. Support for this amendment may be found in Tables 14 and 16 where all of the inventive steels having the claimed composition have values meeting this limit.

Claims 83, 85, 87-110, 112-122, 163-165, 169, and 170 stand rejected under 35 U.S.C. § 103(a) as being obvious over International Patent Application Publication No. WO 2003/031670 to Murakami et al. Claims 83, 85, 88-110, 112-122, 163-165, 169, and 170 stand rejected under 35 U.S.C. § 103(a) as being obvious over Japanese Patent Application Publication No. JP 10-158782 to Kodama. Claims 83, 85, 87-107, 112-122, 163, 164, 169, and 170 stand rejected under 35 U.S.C. § 103(a) as being obvious over United States Patent Application Publication No. 2003/0196735 to Sugiura et al. The Examiner asserts that Murakami, Kodama, and Sugiura teach compositions overlapping the compositions recited in independent claims 83 and 95 and that it would have been obvious to a person skilled in the art to select the narrower claimed range from the broader disclosed ranges because Murakami, Kodama, and Sugiura teach the same utility over the overlapping range. The same reasoning is asserted with respect to Murakami and Kodama and independent claim 108. Further, the Examiner asserts that Murakami and Sugiura teach similar processing to that disclosed for the inventive steel and, thus, it would be expected by a person skilled in the art, based on the overlapping compositions and processing, that the steels of Murakami and Sugiura would have the same type and size

precipitates as recited in independent claims 83, 95, and 108. Kodama is also asserted to teach the type and size precipitates recited in independent claims 83, 95, and 108.

Amended independent claim 83 recites, *inter alia*, a steel sheet having a yield strength of 197 MPa or more and an r_m-value of 1.47 or more. None of the cited prior art references teach or suggest these limitations. Unlike the claimed steel, Murakami is directed to making a simple container and not complex automotive parts. Thus, the steel of Murakami requires very little formability and, therefore, a low r_m-value. A person skilled in the art would not expect the disclosed steel to possess the claimed high r_m-value and would not be motivated to start with the composition of Murakami when developing a steel for automotive stamping requiring improved formability and, thus, a high r_m-value. Kodama teaches a yield strength of less than 150 MPa and preferably less than 120 MPa (paragraph [0039]). Sugiura teaches that at least one of the r_0 and the r_{90} must be less than 0.7 (paragraph [0029]). Persons skilled in the art understand that the r_m-value of a material is equal to $(r_0 + 2r_{45} + r_{90})/4$ (ASTM-E517 Standard Test Method for Plastic Strain Ratio *r* for Sheet Metal). Therefore, this limitation in combination with the r_0 (r_L) and the r_{90} (r_C) values for the inventive examples in Sugiura would teach a person skilled in the art that the steel of Sugiura has an r_m-value much lower than 1.47.

For these reasons, none of the prior art renders independent claim 83 obvious. Claims 85, 87-94, 163, 169, and 170, which depend from claim 83 and further define the invention, are also not obvious for at least the same reasons.

Amended independent claim 95 recites, *inter alia*, a steel consisting essentially of C, S, Al, N, P, Cu, and Fe with dependent claims 103-107 reciting additional elements, Mo and V. "The transitional phrase 'consisting essentially of' limits the scope of a claim to the specified materials or steps 'and those that do not materially affect the basic and novel characteristic(s)' of the claimed invention" (MPEP § 2111.03). Murakami requires 0.002-0.5% Si and 0.03-2.00% Mn (page 14, lines 20-34), which would affect the basic and novel properties of the claimed steel. The addition of 0.03-2.00% Mn to the claimed steel would result in at least a portion of the S provided to form the claimed CuS precipitates being used to form MnS and (Mn,Cu)S precipitates which are varied in a precipitated state according to the amount of Mn, Cu, and S added, and thereby influence the aging resistance, the plasticity-anisotropy index, and the in-

plane anisotropy index (page 19, lines 7-11 in the original specification). The addition of the Si would increase the solid solution strengthening and decrease ductility (page 21, lines 5-7). Similarly, the steel of Kodama has 0.1-0.5 Mn (paragraph [0007]) and the steel of Sugiura has 0.001-3.5% Si (paragraph [0036]) both of which affect the basic and novel properties of the claimed steel as explained above with respect to Murakami.

For these reasons, the cited prior art references do not render independent claim 95 obvious. Claims 96-107 and 164, which depend from independent claim 95 and further define the invention, are also not rendered obvious for at least the same reasons.

Amended independent claim 108 recites, *inter alia*, a steel sheet having a yield strength of 162 MPa or more and an r_m-value of 1.55 or more. Neither Murakami nor Kodama teach or suggest these limitations. Unlike the claimed steel, Murakami is directed to making a simple container and not complex automotive parts. Thus, the steel of Murakami requires very little formability and, therefore, a low r_m-value. A person skilled in the art would not expect the disclosed steel to possess the claimed high r_m-value and would not be motivated to start with the composition of Murakami when developing a steel for automotive stamping requiring improved formability and, thus, a high r_m-value. Kodama teaches a yield strength of less than 150 MPa and preferably less than 120 MPa (paragraph [0039]).

Further, it is noted that, while claims 112-122 are listed as being rejected in section 6 of the Office Action, claim 108 from which they depend has not been rejected and no reasons have been given for their rejection. Applicants assert that these claims, which depend from claim 108 and further define the invention, are allowable for at least the same reasons as claim 108. In addition, Sugiura teaches that at least one of the r_0 and the r_{90} must be less than 0.7 (paragraph [0029]). Persons skilled in the art understand that the r_m-value of a material is equal to $(r_0 + 2r_{45} + r_{90})/4$ (ASTM-E517 Standard Test Method for Plastic Strain Ratio *r* for Sheet Metal). Therefore, this limitation in combination with the r_0 (r_L) and the r_{90} (r_C) values for the inventive examples in Sugiura would teach a person skilled in the art that the steel of Sugiura has an r_m-value much lower than 1.55 as required by amended independent claim 108.

For these reasons, none of the prior art renders independent claim 108 obvious. Claims 109, 110, 112-122, and 165, which depend from claim 108 and further define the invention, are also not obvious for at least the same reasons.

Based on the foregoing amendments and remarks, reconsideration and withdrawal of the rejection of claims 83, 85, 87-110, 112-122, 163-165, 169, and 170 are respectfully requested.

Respectfully submitted,

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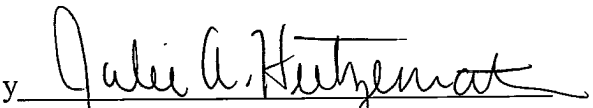
By 

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